

REMARKS

The examiner is thanked for the performance of a thorough search. By this amendment, Claims 1, 18, and 19 have been amended, no claims are cancelled or added, and Claims 1-31 are pending in the application. The amendments to the Claims as indicated herein do not add any new matter to this application. Furthermore, amendments made to the Claims as indicated herein have been made to exclusively improve readability and clarity of the Claims and not for the purpose of overcoming alleged prior art. Each issue raised in the Office Action mailed April 10, 2008 is addressed hereinafter.

I. ISSUES NOT RELATING TO PRIOR ART

A. SPECIFICATION

The Office Action objected to Paragraph 76 of the specification. Applicant believes that no amendment to Paragraph 76 is necessary in light of amendments to the Claims with regard to the Office Action's 35 U.S.C. 101 rejections.

Paragraph 36 is amended to address a minor informality.

B. SECTION 101 ISSUES—CLAIMS 18 & 19

The Office Action rejected Claims 18 and 19 under 35 U.S.C. 101 as allegedly directed to non-statutory subject matter. Claim 18 is amended herein to teach “[a]n apparatus, comprising ... a computer-readable **volatile or non-volatile medium** having stored thereon one or more stored sequences of instructions that are accessible to the processor . . . .” Claim 19 has also been amended to teach “[a] computer-readable volatile or non-volatile medium storing one or more sequences of instructions . . . .” The specification in paragraph 0075 distinguishes between volatile or non-volatile [storage] media, and transmission media, so the current form of Claims 18 and 19 does not encompass transmission media. Thus, Claims 18 and 19 are directed to statutory subject matter and no amendment to the specification is required. Therefore,

Applicants believe that the present Claims fully address all section 101 issues. Reconsideration is respectfully requested.

## II. ISSUES RELATING TO PRIOR ART

### A. CLAIMS 1, 17-19

Claims 1, and 17-19 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Schuba U.S. Pat. No. 6,944,663 (“Schuba”). The rejection is respectfully traversed. Claim 1 recites:

A method of preventing an attack on a network, the method comprising the computer-implemented steps of:

receiving a request to access a resource from a user, **wherein the request includes an accumulated work value;**  
**wherein the accumulated work value represents an amount of work previously performed by the user and accumulated across multiple prior requests;**  
**determining whether the accumulated work value exceeds a required work threshold value, and if not, requiring the user to perform a quantity of work as a condition for accessing the resource;**  
providing the user with access to the resource;  
**determining an amount of accumulated work output value to provide to the user based on a volume of data communicated between the resource and the user;**  
**and**  
**wherein the accumulated work output value represents a second amount of work performed by the user;**  
**providing the accumulated work output value to the user.**

At least the above-bolded features of Claim 1 are not described or suggested by Schuba. Support for the amendments is at least in found in paragraphs 22, 31, 39, 47, FIG. 2B step 122, and original claim 16.

The Office Action relies on Schuba step 204, step 206, and col. 3 lines 53-58 for disclosing “receiving a request to access a resource from a user, wherein the request includes an accumulated work value representing an amount of work previously performed by the user” as recited in Claim 1. This is incorrect. The request from the user recited in Claim 1 includes “an accumulated work value representing an amount of work previously performed by the user and

accumulated across multiple prior requests.” The “request for service from a client” (Col. 3, line 53) as described by Schuba makes no mention of any kind of work value transmitted with the client request.

The Office Action attempts to equate the teaching of Schuba wherein the server system prepares to send the client a puzzle (by generating a random number and a transaction identifier as well as “a value for the parameter, n, which specifies the amount of computational work involved in computing the preimage x . . .” (Col. 3, lines 54-58)) with “the accumulated work value” of Claim 1. This cannot be correct because the values mentioned in Schuba are **generated by the system, not received in a user request** as recited in Claim 1 with regard to “the accumulated work value” and because the values mentioned in Schuba are not representative of “an amount of work previously performed by the user” as recited in Claim 1.

Moreover, the amount of computational work identified in Schuba is not **accumulated across multiple prior requests** of the user, as claimed. Each amount value in Schuba is discrete and particular for a single request and does not represent an accumulation.

The Office Action relies on Schuba step 220, step 222, step 224 and col. 4 lines 35-39 for disclosing “determining whether the accumulated work value exceeds a required work threshold value, and if not, requiring the user to perform a quantity of work as a condition for accessing the resource” as recited in Claim 1. As previously established, “the accumulated work value” is received from the user in the user’s request to access a resource. Because Schuba does not teach an “accumulated work value” as recited in Claim 1, it cannot teach “determining whether the accumulated work value exceeds a required work threshold value, and if not, requiring the user to perform a quantity of work as a condition for accessing the resource” as recited in Claim 1.

Furthermore, Schuba in no way teaches “requiring the user to perform a quantity of work as a condition for accessing the resource” **if an accumulated work value does not exceed a**

**required work threshold value**, as recited in Claim 1. Schuba teaches in the alternative: (1) performing the requested service for the client if they return a correct answer to the Schuba puzzle (Col. 4, line 38); (2) rejecting the request and ignoring subsequent communications from the client if the client returns an incorrect answer to the Schuba puzzle (Col. 4, lines 40-41); or (3) increasing the service time for subsequent requests from the client in which the client returns an incorrect answer to the Schuba puzzle (Col. 4, lines 42-46). Thus Schuba fails to teach or suggest the feature of “determining whether the accumulated work value exceeds a required work threshold value, and if not, requiring the user to perform a quantity of work as a condition for accessing the resource” as recited in Claim 1.

The Office Action further relies on Schuba step 204, step 206, and col. 3 lines 53-58 for disclosing “determining an amount of accumulated work output value to provide to the user based on a volume of data communicated between the resource and the user, wherein the accumulated work output value represents a second amount of work performed by the user; and providing the accumulated work output value to the user” as recited in Claim 1. This is incorrect. The values that the system of Schuba computes and eventually sends to the client (Col. 3, lines 53-60) are merely preparation for Schuba to send the client a quantity of work **to be performed** and do not represent an “amount of work **performed** by the user” as in Claim 1.

For at least these reasons, Schuba does not anticipate Claim 1.

These differences between Claim 1 and Schuba are not a matter of “interpreting” Schuba or the Claims. Schuba is simply lacking multiple specifically claimed features and it is clear error to contend otherwise. Schuba is merely cumulative as art because it represents an example of the old proof of work approach that is described and distinguished in the Background of applicants’ specification at paragraphs 3-5.

Claims 17-19 also include the same features described above for Claim 1 that distinguishes Claim 1 from Schubas, except that Claims 17-19 are expressed in apparatus format and computer-readable storage medium format. For the same reasons set forth above for Claim 1, Schubas does not anticipate Claims 17-19.

Reconsideration of Claims 1 and 17-19 is respectfully requested.

B. CLAIMS 2, 20, 24 & 28

Claims 2, 20, 24, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schubas. The rejection is respectfully traversed.

Claim 2 depends from Claim 1 and therefore Claim 2 includes by dependency each of the features described in section A above that distinguish Claim 1 from Schubas. The rationale of paragraph 6 of the Office Action only addresses the “prior user identity value” and “current user identity value” features of Claim 2 and does not cure the deficiencies of Schubas with respect to the distinguishing features identified in section A. Therefore, Schubas in combination with the rationale of paragraph 6 of the Office Action cannot provide the complete subject matter recited in Claim 2. Consequently, the Office Action does not establish a *prima facie* case of unpatentability of Claim 2 in view of Schubas.

Furthermore, Claims 20, 24, and 28 depend from Claims 19, 17, and 18 respectively, and are patentable over the cited references for at least the same reasons as those discussed in connection with Claims 17-19. As is discussed above, Claims 17-19 recite features that Schubas does not disclose. As with Claim 2, the rationale of paragraph 6 of the Office Action only addresses the “prior user identity value” and “current user identity value” features of Claim 2 and does not cure the deficiencies of Schubas with respect to the distinguishing features identified in section A. Therefore, Schubas in combination with the rationale of paragraph 6 of the Office Action cannot provide the complete subject matter recited in Claims 20, 24, and 28.

Consequently, the Office Action does not establish a *prima facie* case of unpatentability of Claims 20, 24, and 28 in view of Schubach.

C. CLAIMS 3-16, 21-23, 25-27 & 29-31

Claims 3-16, 21-23, 25-27, and 29-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schubach in view of Juels U.S. Pat. No. 7,197,639 (“Juels”). The rejection is respectfully traversed.

Each of Claims 3-15 depends from Claim 1 and therefore includes by dependency each of the features described in section A above that distinguish Claim 1 from Schubach. The description in Juels does not cure the deficiencies of Schubach with respect to the distinguishing features identified in section A. Further, Juels merely refers to “a secret password or other form of authentication” and not a “prior keyless user identify value” or a “one-time password,” and the non-specific description in Juels does not suggest the specific technique that is Claimed. Therefore, Schubach in combination with Juels cannot provide the complete subject matter recited in Claims 3-15. Consequently, the Office Action does not establish a *prima facie* case of unpatentability of Claims 3-15 based on Schubach in view of Juels. Reconsideration is respectfully requested.

Claim 16 is independent and includes each of the features described in section A above that distinguish Claim 1 from Schubach. Juels does not cure the deficiencies of Schubach with respect to the distinguishing features identified in section A. Specifically, Claim 16 recites:

A method of preventing an attack on a network, the method comprising computer-implemented steps of:

- receiving a request to access a resource from a user, **wherein the request includes an accumulated work value that represents work that the resource has previously required the user to perform in order to obtain previous access to the resource;**
- determining whether the accumulated work value exceeds a required work threshold value;** and

providing the user with access to the resource only when the accumulated work value exceeds a required work threshold value.

At least the above-bolded features are not disclosed by Schuba or Juels, even when considered in combination.

The Office Action relies on Juels (Col. 9, lines 10-14) for allegedly describing “wherein the request includes an accumulated work value that represents work that the resource has previously required the user to perform in order to obtain previous access to the resource.” However, Juels does not actually disclose this feature of Claim 16. The cited portion of Juels merely provides that different client puzzles of increasing size can be given to a client (not received from it in a request) as a server gets closer to a disabling condition. It is argued by the Office Action that this portion of Juels “provides suggestion for work that was previously required through the scalability of computations/puzzles dependent and adjusted according to previous and current conditions.” Even if that were true, the suggestion of work that a server previously required the universe of the server’s clients to perform is not the same as the feature of Claim 16 that the request from the user must include “an accumulated work value that represents work **that the resource has previously required the user to perform** in order to obtain previous access to the resource.” Claim 16 teaches that the accumulated work value found in the user’s request must reflect the work that that particular user had previously performed “in order to obtain previous access to the resource.” Thus, Juels fails to disclose this feature of Claim 16. It is not alleged that Schuba teaches this portion of Claim 16.

Furthermore, the Office Action relies on Schuba (Col. 4, lines 35-39) for disclosing “determining whether the accumulated work value exceeds a required work threshold value” of Claim 16. This is incorrect. As previously established in Section A with regard to Claim 1, Schuba does not teach or suggest this feature. Firstly, “the accumulated work value” is received

from the user in the user's request to access a resource, and it was established in Section A that Schuba does not teach an "accumulated work value" received in a request to access resources from a user as recited in Claim 16 (as in Claim 1). Thus, Schuba cannot teach "determining whether the accumulated work value exceeds a required work threshold value" as recited in Claim 16. It is not even alleged that Juels teaches or suggests this feature of Claim 16.

Therefore, Schuba in combination with Juels cannot provide the complete subject matter recited in Claim 16. Consequently, the Office Action does not establish a *prima facie* case of unpatentability of Claim 16 in view of Schuba and Juels. Reconsideration is respectfully requested.

Furthermore, each of Claims 21-23, 25-27, and 29-31 depends from one of Claims 17-19 discussed above, and are patentable over the cited references for at least the same reasons as those discussed in connection with Claims 17-19. As is discussed above, Claims 17-19 recite features that Schuba does not disclose. Therefore, Claims 21-23, 25-27, and 29-31, which include these features by dependency, are patentable over Schuba and Juels, even when considered in combination, under 35 U.S.C. § 103(a). Reconsideration is respectfully requested.

### III. CONCLUSIONS & MISCELLANEOUS

For the reasons set forth above, all of the pending Claims are now in condition for allowance. The Examiner is respectfully requested to contact the undersigned by telephone relating to any issue that would advance examination of the present application.

A Request for Continued Examination and RCE fee are concurrently submitted herewith and withdrawal of the finality of the case is respectfully requested.

A petition for extension of time, to the extent necessary to make this reply timely filed, is hereby made. If applicable, a law firm check for the petition for extension of time fee is enclosed herewith. If any applicable fee is missing or insufficient, throughout the pendency of this



application, the Commissioner is hereby authorized to charge any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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